

In the Claims

Please amend claims 10, 13, 14, 18, 19, 21, 23, 27 and 28 as follows:

1 1-9. (Canceled.)

1 10. (Currently Amended) An apparatus for selectively forming a silicide
2 comprising:

3 a semiconductor substrate having a surface, a portion of said surface having
4 silicon thereon and a portion of said surface having an insulator thereon,
5 said surface further having an oxide thereover;

6 a mainframe housing chamber comprising a plurality of at least an interior
7 cleaning chambers, at least one interior chamber adapted to remove for
8 removing said oxide from said surface of said substrate while under a
9 continuous vacuum, and at least one an interior deposition chamber
10 adapted to deposit for depositing a metal on said surface of said substrate
11 while under said continuous vacuum;

12 at least one workpiece holder within said mainframe chamber adapted to hold
13 said substrate;

14 at least one pump adapted to evacuate said mainframe chamber to maintain
15 said continuous vacuum in said mainframe chamber;

16 at least one line operatively connected between said at least one pump and
17 said mainframe chamber for evacuating said mainframe chamber;
18 at least one input line adapted to provide a chemical agent into said interior
19 cleaning chamber within said mainframe while ~~in~~under said continuous
20 vacuum, said chemical agent adapted to remove said oxide from said
21 surface of said substrate;
22 at least one output line adapted to remove said cleaning agent and said
23 removed oxide from said interior cleaning chamber and said mainframe;
24 a reactor in said deposition chamber within said mainframe, said reactor
25 adapted to deposit said metal onto said silicon and insulator portions on
26 said substrate surface while ~~under~~in said continuous vacuum;
27 a heating element, said heating element adapted to heat said substrate to an
28 elevated temperature to form a silicide on said substrate surface over the
29 silicon portion by reaction with the metal deposited thereon, while the
30 metal remains unreacted over the insulator portion; and
31 an etchant to remove unreacted metal from the substrate surface while leaving
32 said silicide over portions of said semiconductor substrate.

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1 11. (Canceled.)

1 12. (Canceled.)

1 13. (Currently Amended) The apparatus of claim 10 further comprising ~~at least~~
2 ~~one~~ an interior heating chamber within said mainframe for heating ~~adapted~~ ~~to~~ ~~heat~~
3 said substrate to form said silicide on said substrate surface.

1 14. (Currently Amended) The apparatus of claim 13+0 wherein said apparatus
2 is adapted to transfer said substrate between said interior cleaning chamber
3 ~~adapted~~ ~~to~~ ~~remove~~ ~~said~~ ~~oxide~~ ~~from~~ ~~said~~ ~~surface~~ ~~of~~ ~~said~~ ~~substrate~~ and said interior
4 deposition chamber ~~adapted~~ ~~to~~ ~~deposit~~ ~~said~~ ~~metal~~ ~~on~~ ~~said~~ ~~surface~~ ~~of~~ ~~said~~ ~~substrate~~
5 without breaking said continuous vacuum.

1 15. (Original) The apparatus of claim 14 wherein said substrate is a silicon
2 *cont*
3 substrate.

1 16. (Original) The apparatus of claim 15 wherein said apparatus is adapted to
2 remove said oxide from said surface of said substrate using a nitrogen triflouride
3 cleaning process.

1 17. (Original) The apparatus of claim 16 wherein said metal is cobalt.

1 18. (Currently Amended) The apparatus of claim 17 wherein said interior
2 | deposition chamber adapted to deposit said metal on said surface of said substrate
3 is a vapor sputtering device.

1 19. (Currently Amended) The apparatus of claim 18 wherein said apparatus is
2 | further adapted to transfer said substrate to said interior heating chamber from said
3 | interior metal deposition chamber.

1 20. (Original) The apparatus of claim 19 wherein said silicide is cobalt silicide.

1 21. (Currently Amended) A system for selectively forming a silicide on a
2 | surface of a semiconductor substrate comprising:
3 | said semiconductor substrate having said surface, a portion of said surface
4 | having silicon thereon and a portion of said surface having an insulator
5 | thereon, said surface further having an oxide thereover;
6 | a chamber mainframe comprising a plurality of at least an interior chambers, at
7 | least one interior cleaning chamber adapted to remove said oxide from said
8 | surface of said substrate while under a continuous vacuum, and at least one
9 | an interior deposition chamber adapted to deposit a metal on said surface
10 | of said substrate while under said continuous vacuum;

11 at least one pump adapted to evacuate said mainframe chamber to maintain
12 said continuous vacuum in said mainframe chamber;
13 a chemical agent input into said interior cleaning chamber within said
14 mainframe, said chemical agent for removing ~~adapted~~ ~~to~~ ~~remove~~ said oxide
15 from said surface of said substrate while ~~said~~ chamber ~~is~~ under said
16 continuous vacuum;
17 a reactor in said deposition chamber within said mainframe, said reactor for
18 depositing~~adapted~~ ~~to~~ deposit said metal onto said silicon and insulator
19 portions on said substrate surface while under said continuous vacuum;
20 a heating element, said heating element adapted to heat said substrate to an
21 elevated temperature to form a silicide on said substrate surface over the
22 silicon portion by reaction with the metal deposited thereon, while the
23 metal remains unreacted over the insulator portion; and
24 an etchant to remove unreacted metal from the substrate surface while leaving
25 said silicide over portions of said semiconductor substrate.

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1 22. (Canceled.)

1 23. (Currently Amended) The system of claim 21 wherein said apparatus is
2 adapted to transfer said substrate between said interior cleaning chamber ~~adapted~~
3 ~~to remove said oxide from said surface of said substrate and said interior~~

4 | deposition chamber adapted to deposit said metal on said surface of said substrate
5 | without breaking said continuous vacuum.

1 | 24. (Previously Added) The system of claim 21 wherein said metal is cobalt.

1 | 25. (Previously Added) The system of claim 21 wherein said chemical agent is
2 | selected from the group consisting of nitrogen triflouride and argon.

1 | 26. (Previously Added) The system of claim 21 wherein said reactor for
2 | depositing said metal on said surface of said substrate is a vapor sputtering device.

1 | 27. (Currently Amended) The system of claim 21 wherein said heating element
2 | is enhoused resides-within said mainframechamber.

1 | 28. (Currently Amended) The system of claim 21 wherein said heating element
2 | is external thereto said mainframechamber.

1 | 29. (Previously Added) The system of claim 21 wherein said unreacted cobalt
2 | is removed using an etchant comprising hydrogen peroxide and sulfuric acid.

1 | 30. (Canceled.)